ADJUSTABLE DUMBBELL

FIELD OF THE INVENTION

The present invention relates to a dumbbell and, more particularly, to an adjustable dumbbell.

BACKGROUND OF THE INVENTION

A conventional dumbbell is an integrated member having a particular gravity weight. For different exercising requirements, different dumbbells of different gravity weights shall be used. It is expensive to prepare a number of dumbbells of different gravity weights. In order to eliminate this problem, adjustable dumbbells are developed. There is known an adjustable dumbbell, which comprises weight carrier means carrying a number of weights, and selector controlled to select weights for exercising. According to this design, each weight comprises two heavy plate members disposed at two sides, and connecting rods connected between the heavy plate members. These weights are bulky. Before selection, the weights are arranged in stacks. When received in the weight carrier means, the weights are not stably kept in a good order for

easy selection.

SUMMARY OF THE INVENTION

The primary object of the present invention is to provide an adjustable dumbbell, which has a simple construction and a nice outer looking.

It is another object of the present invention to provide an adjustable dumbbell, which keeps weights positively in a good order for selection.

To achieve the objects of the present invention, the adjustable dumbbell comprises a weight carrier pan, the weight carrier pan having a predetermined number of insertion slots. A plurality of flat weights are received in the insertion slots of the weight carrier pan, each having a center through hole. A support bar unit has two bearing plates, a center sleeve connected between the bearing plates, and two suspension racks respectively fixedly fastened to the bearing plates at an outer side, each suspension racks having a predetermined number of insertion slots for the positioning of the weights respectively. A selector is installed in the support bar unit and has two rod members mounted in the center sleeve of the support bar unit, and an adjusting mechanism controlled to move the rod members axially out of two distal ends of the center sleeve into the center holes of the weights to selectively secure the weights to the support bar unit for exercising.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of an adjustable dumbbell constructed according to a first embodiment of the present invention.

FIG. 2 is a sectional view taken along line 2-2 of FIG. 1.

FIG. 3 is a perspective view of an adjustable dumbbell constructed according to a second embodiment of the present invention.

FIG. 4 is a sectional view taken along line 4-4 of FIG. 3.

DETAILED DESCRIPTION OF THE INVENTION

Referring to FIGS. 1 and 2, an adjustable dumbbell 20 according to a first preferred embodiment of the present invention is shown comprised of a weight carrier pan 30, weights 40, a support bar unit 50, and a selector 60.

The weight carrier pan 30 is a rectangular pan, comprising an upright peripheral wall 31, a holding space 32 surrounded by the upright peripheral wall 31, pairs of partition plates 34 symmetrically disposed at two sides in the holding space 32, and insertion slots 33 defined in the holding space 32 at two sides and separated by the partition plates 34 for holding the weights 40.

The weights 40 are rectangular heavy plate members receivable in the insertion slots 33 of the weight carrier pan 30, each having a center through hole 41 for mounting.

The support bar unit 50 comprises two bearing plates 51 and 52 disposed in parallel, the bearing plates 51 and 52 each having a center through hole 511 or 521, a center sleeve 53 inserted into the center through holes 511 and 521 of the bearing plates 51 and 52 and connected between the bearing plates 51 and 52, the center sleeve 53 defining an axially extended through hole 54 and having a view window 531, four bars 55 connected between the bearing plates 51 and 52 in four corners around the center sleeve 53 for the holding of the hand to exercise the adjustable dumbbell, two cap-like suspension racks 56 respectively fixedly fastened to the bearing plates 51 and 52 at an outer side with the respective opening facing downwards, the cap-like suspension racks 56 having a width corresponding to the width of the weights 40 and a height not greater than the height of the weights 40, symmetrical pairs of partition plates 57 respectively fixedly provided in the cap-like suspension racks 56, and a plurality of downward insertion slots 58 respectively defined in the cap-like suspension racks 56 and separated by the partition plates 57 for receiving the weights 40. Further, the left bearing plate 51 has a view window 512 through which the user can visually check the number of weights 40 mounted on the support bar unit 50. The right bearing plate 52 further comprises a blind hole 522 disposed on the inside, and a retaining device 59 mounted in the blind hole 522. The retaining device 59 comprises a spring 591 mounted in the blind hole

522, and a steel ball 592 supported on the spring 591.

The selector 60 comprises a coupling tube 61 mounted in the center sleeve 53 of the support bar unit 50, a first nut 611 fixedly fastened to one end of the connecting tube 61, the first nut 611 being externally threaded, a second nut 612 fixedly fastened to the other end of the coupling tube 61, a left-handed screw rod 62 of semicircular cross section threaded into the second nut 612 and rotated in and out of one end of the axially extended through hole 54 of the center sleeve 53, a right-handed screw rod 63 threaded into the first nut 611, a control knob 64 mounted in the right bearing plate 52 and meshed with the externally threaded first nut 611, a locking member 651 adapted to lock the control knob 64, a slide switch 65 for controlling the locking member 651 to lock/unlock the control knob 64, a display wheel 66 mounted in the left bearing plate 51 above the left-handed screw rod 62, a rack 661 fixedly provided at the display wheel 66, an upper ratchet 662 meshed with the rack 661, and a lower ratchet 663 connected to the upper ratchet 662 and meshed with the left-handed screw rod 62. Further, the right-handed screw rod 63 has numerical signs that can be viewed through the view window 531 in the center sleeve 53. When rotating the control knob 64, the first nut 611 is driven to rotate the coupling tube 61, thereby causing the left-handed screw rod 62 and the right-handed screw rod 63 to be respectively rotated out of the bearing plates 51 and 52 and inserted into the center through holes 41 of the selected weights 40, and at the same time the user can view the corresponding numerical sign on the right-handed screw rod 63 through the view window 531 and the corresponding numerical sign on

the rack 661 through the view window 512.

When in use, move the slide switch 65 rightwards to disengage the locking member 651 from the control knob 64, and then rotate the control knob 64 to extend the left-handed screw rod 62 and the right-handed screw rod 63 out of the axially extended through hole 54 of the center sleeve 53 into center through holes 41 of the selected weights 40, and then move the slide switch 65 leftwards to engage the locking member 651 into the control knob 64 and the lock the control knob 64. At this time, the selected weights 40 are secured to respective downward insertion slots 58 in the cap-like suspension racks 56 and separated by the partition plates 57. When the user lifted the support bar unit 50, the selected weights 40 are stably lifted with the left-handed screw rod 62 and the right-handed screw rod 63 from the weight carrier pan 30 for exercising. The other weights 40 are left in the holding space 32 of the weight carrier pan 30, and kept in good order in the insertion slots 33 by the upright peripheral wall 31 and the partition plates 34.

FIGS. 3 and 4 show an adjustable dumbbell constructed according to a second preferred embodiment of the present invention. According to this embodiment, the suspension racks 85 are shaped like a substantially inverted U-shaped frame bar respectively fixedly fastened to the two bearing plates 81 and 82 of the support bar unit 80 of the adjustable dumbbell 70 at an outer side. Each suspension rack 85 has a plurality of partition plates 87 respectively inwardly extended from the two opposite side rods thereof, defining a predetermined number of insertion slots 88

adapted for receiving the weights 40 stably.